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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/557,289	04/25/2000	Jack L. Jewell	PICO-0029-1.	8161

7590 06/11/2007  
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FAIRFAX, VA 22030

EXAMINER
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NGUYEN, PHILLIP

ART UNIT	PAPER NUMBER
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2828

MAIL DATE	DELIVERY MODE
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06/11/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

09/557,289

Applicant(s)

JEWELL, JACK L.

Examiner

Phillip Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 57-63 and 66-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 57-63 and 66-77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Acknowledgement***

1. Claims 57, 59-62, 66, 68-71, 73-77 have been amended. Claims 64-65 have been cancelled.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 57-63 and 65-77 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 57-67, 69-72, and 74-75 are rejected under 35 U.S.C. 102(e) as being anticipated by Lear (US 5568499).

With respect to claims 57, Lear discloses the claimed invention. Particularly in Fig. 2, Lear discloses a laser structure, comprising: an active region 28; a first electrical contact 20 disposed on a first surface of said laser structure; a second electrical contact 22, said active

Art Unit: 2828

region being disposed between said first and second electrical contacts; a first oxidizable layer, said first oxidizable layer being subject to physical change when exposed to an oxidizing agent; means for selectively exposing a portion of said first oxidizable layer to said oxidizing agent; a first unchanged region (middle part of layer 34) of said first oxidizable layer surrounded by a first changed region of said first oxidizable layer, said first unchanged region of said first oxidizable layer being aligned with a preselected region (middle part) of said active region 28, said first changed region being electrically insulative, said first unchanged region being electrically conductive; wherein said means for selectively exposing includes at least one etched depression extending from said first surface of said laser structure into the body of said laser structure and through said first oxidizable layer to expose a portion of said oxidizable layer to said oxidizing agent during manufacture of said laser structure (col. 8, lines 46-67 to col. 9, lines 9 and col. 10, lines 15-62).

With respect to claim 58, Lear discloses the laser structure is a VCSEL.

With respect to claims 59 and 72, since Lear discloses top mirror 16 having multiple layers of oxidizable layer 34, there is a second oxidizable layer and it is also oxidized when exposed to water vapor and become electrically insulative.

With respect to claims 60, 61, 70 and 75, Lear discloses said laser structure comprises a substrate portion 12, a lasing portion (active layer 28) disposed on said substrate portion, a contact support portion 24 disposed on said substrate portion, and a bridging portion 30 disposed on said substrate portion, said bridging portion connected between said lasing portion and said contact support portion, said first oxidizable layer being exposed at a surface of said lasing portion.

Art Unit: 2828

With respect to claims 62 and 63, Lear teaches the physical change is oxidization and said oxidizing agent is water vapor (col. 8, lines 53-60).

With respect to claim 67, Lear teaches a first and second mirror structures 14 and 16 comprising a plurality of layers (plurality of mirror pairs 32 and 34), said active layer 28 is disposed between said first and second mirror structures 14 and 16.

With respect to claims 69, 71, 74 Lear discloses the claimed invention as shown in the rejection of claims 57 and 58. In Fig. 2, Lear further teaches the top mirror 16 having multiple pairs of low and high aluminum content which are oxidizable. At least two pairs define the first and second oxidizable layers and the middle parts of these layers define first and second nonoxidizable region which are aligned with a preselected region of said active region.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 68, 73, and 76-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lear (US 5568499). Lear discloses the claimed invention except for explicitly teaching the first and second means for exposing further include four etched depression. It would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide plurality of etched depressions, such as four etched depressions, in order to completely oxidize the outer oxidizable layers to create a current restriction region.

Art Unit: 2828

***Communication Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



/Phillip Nguyen/

AU 2828